SERVICE MANUAL

CP-130

4822 725 50908

marantz®

model CP130

Portable Cassette Recoder

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound.
Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

MARANTZ INTERNATIONAL
Vestdijk 9
5600 MD Eindhoven
The Netherlands
Phone: +31/40.758290
Telefax: +31/40.75.82.99
Telex: 35000 PHTC NL routing IND NLMTFAT

ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, correct part number has to be specified.
The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING

Parts may be ordered at the following addresses:

AUSTRIA
HORNYPHON
Vertriebsgesellschaft GmbH
Wienerbergstrasse 1
A 1101 Wien
Austria
Telex: 132.332

BELGIUM
SVD DIVISION MARANTZ
Industrialaan 1
1720 Groot-Bijgaarden
Belgium
Telex: 24466

CHILE
MARANTZ
DIVISION OF PHILIPS S.A.
AV. Santa Maria, 0760
Casilla 2687
Santiago
Telex: 240.239

FRANCE
MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

GERMANY
MARANTZ GERMANY GmbH
Alexanderstrasse 1
2000 Hamburg
Germany

THE NETHERLANDS
Elpro Marantz
Wint Hontlaan 28
3526 KV Utrecht
The Netherlands
Telex: 4748

GREAT BRITAIN
MARANTZ HiFi U.K. Ltd
Kingsbridge House
Padbury oaks
575-583 Bath Road
Long ford
Middlesex UB7 OEH
Faxnr.: 0753 680 428

GREECE
SHERTON ELECTRONICS S.A.
P.O.Box 21025
Hippocratus Street 188
Athens 11471
Greece
Telex: 216.795

JAPAN
MARANTZ JAPAN, Inc.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

KUWAIT
AL ALAMIAH ELECTRONICS
Ussama Building
Fahd al Saleem Street
P.O.Box 23781
Safat-Kuwait
Telex: 22694

ITALY
MARANTZ ITALIANA S.P.A.
Via Chiese, 74
20126 Milano
Italy

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia
Telex: 401530

SOUTH AFRICA
MARANTZ
DIVISION OF PHILIPS S.A.
Main Road Martindale
P.O. Box. 58088
Newville 21114
South Africa

SPAIN
Euroservice S.A.
Bernardo obrëgón, 26
28012 Madrid
faxnr.: 3412 306 198

SWITZERLAND
MARANTZ
Technischer Service
Duenstrasse 3
3186 Düdingen
Switzerland

TURKEY
DOGRUOL Ltd.
I.M.C.
6 Blok N°6310
Unkapani
Istanbul
Turkey
Telex: 22085

MALTA
CACHIA & GALEA
Republic Street, 68D
Valetta
Telex: 1682

PORTUGAL
MARANTZ
Divisao philips S.A. service
Outurela-carnaxide
2795 LinDA-A-VELHA
Telex: 43906

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

MODEL CP130 PORTABLE CASSETTE RECORDER

TABLE OF CONTENTS

Section		Page
1.	BLOCK DIAGRAM	3
2.	SCHEMATIC DIAGRAM AND PARTS LOCATIONS	5
3.	EXPLODED VIEW AND PARTS LIST	10
4.	MECHANISM AND CIRCUIT DESCRIPTION	14
5.	ELECTRICAL ADJUSTMENTS	15
6.	ELECTRICAL PARTS LIST	17

TECHNICAL SPECIFICATIONS

Tape Drive System ..... Single Capstan Drive
Cartridge ..... Philips type compact cassette
Track System 2-track 1-channel
Tape Speed ..... 1-7/8 ips and 15/16 ips
Heads ..... 2 Head System
Record/Playback: Super Hard Metal Alloy
Erase: Dual Gap Metal Alloy
Motor ..... DC Servo Motor

Frequency Response:

	Standard Speed 1-7/8 ips (±3 dB)	Long Play 15/16 ips (±3 dB)
Normal Tape	40 Hz ~ 12 kHz	40 Hz ~ 6 kHz
CrO_2 Tape	40 Hz ~ 13.5 kHz	40 Hz ~ 7 kHz
Metal Tape	40 Hz ~ 14 kHz	40 Hz ~ 8 kHz

Signal to Noise Ratio:
- Normal Tape ..... 55 dB
- CrO_2 Tape ..... 57 dB
- Metal Tape ..... 57 dB

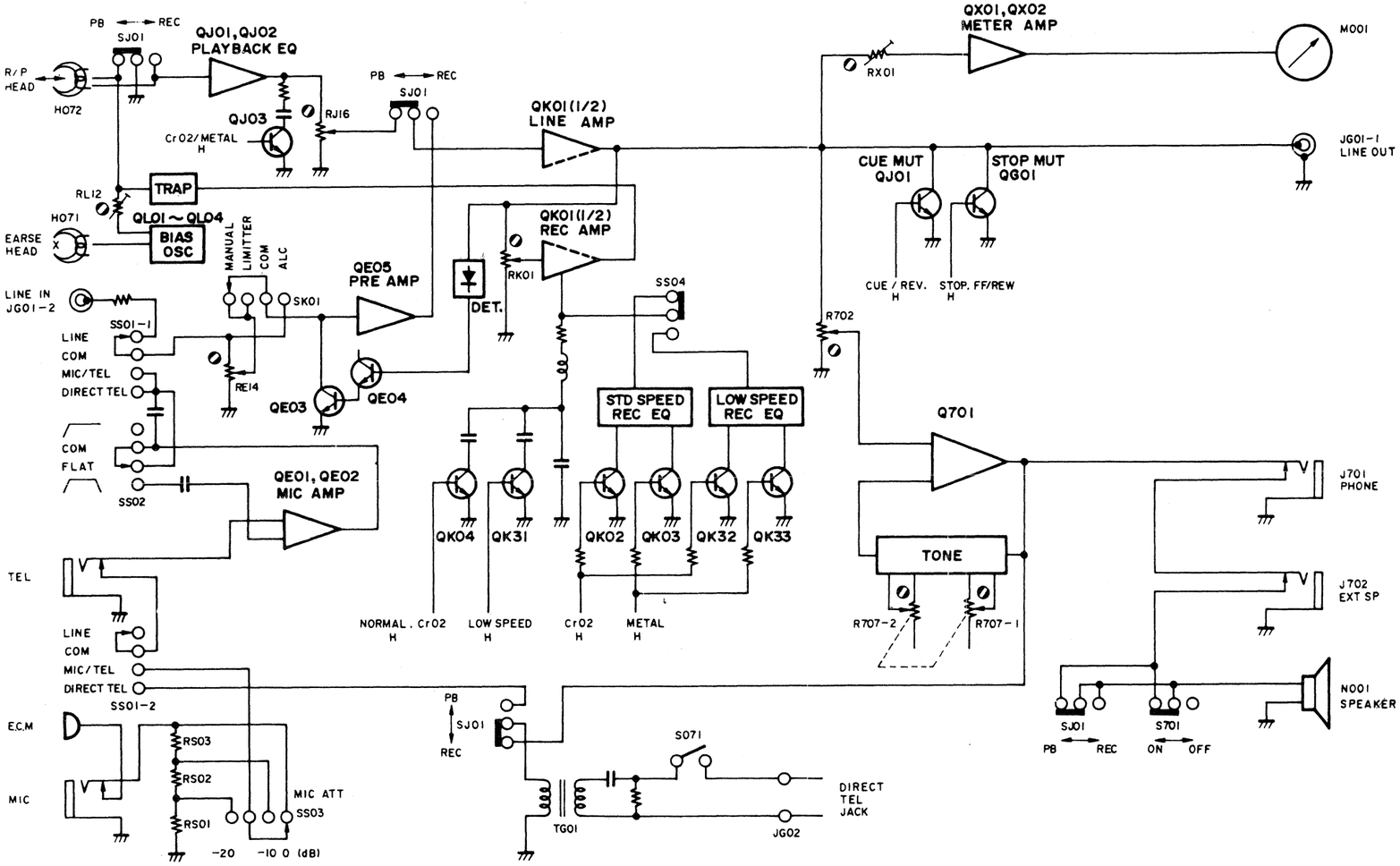
Wow and Flutter (WRMS)
- Standard Speed 1-7/8 ips 0.12%
- Long Play 15/16 ips 0.15%

Output Level/Impedance
- Line ..... 650 mV/2 k ohms
- Headphone ..... 280 mV/8 ohms

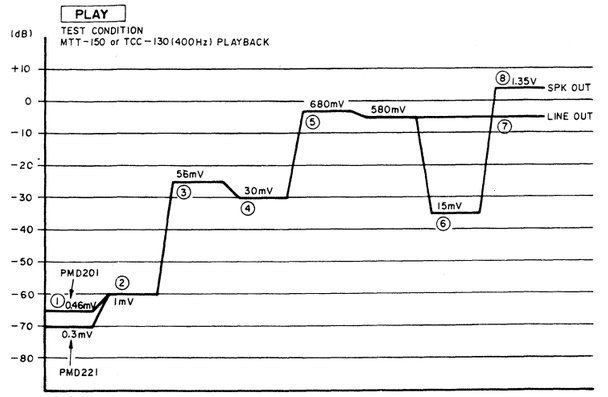
Input Sensitivity/Impedance
- Line ..... 40 mV/56 kohms
- Microphone ..... 0.3 mV/9 k ohms

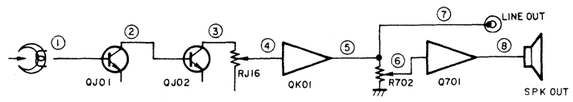
General:
- Power Requirements ..... 120 V, 50/60 Hz
- Battery Requirements (RB430 Battery Pack Optional) ..... 3 D Cells or RB430 Rechargeable Battery Pack
- Battery Life
  - With Alkaline Batteries
    - Playback Time ..... 7.5 Hours
    - Recording Time with Metal Tape ..... 5.5 Hours
  - With RB430 Battery Pack (optional)
    - Playback Time ..... 4.5 Hours
    - Recording Time with Metal Tape ..... 4.0 Hours
- Unit Dimensions and Weight
  - Width ..... 228 mm (9")
  - Heigth ..... 51 mm (2")
  - Depth ..... 165 mm (6.5")
  - Weight ..... 1.3 kg (2.87 lbs.)

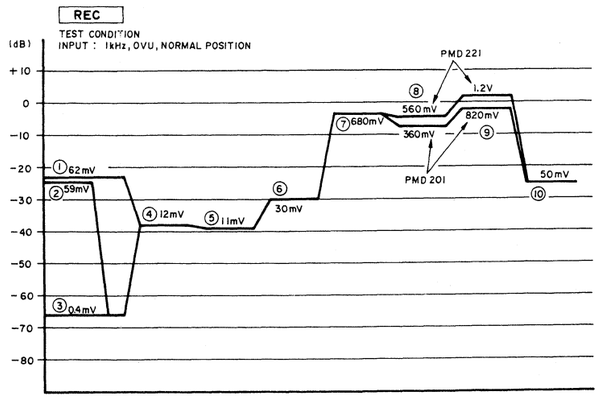
1. BLOCK DIAGRAM

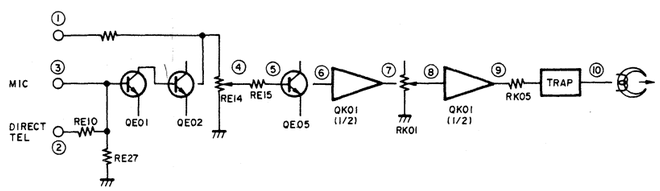


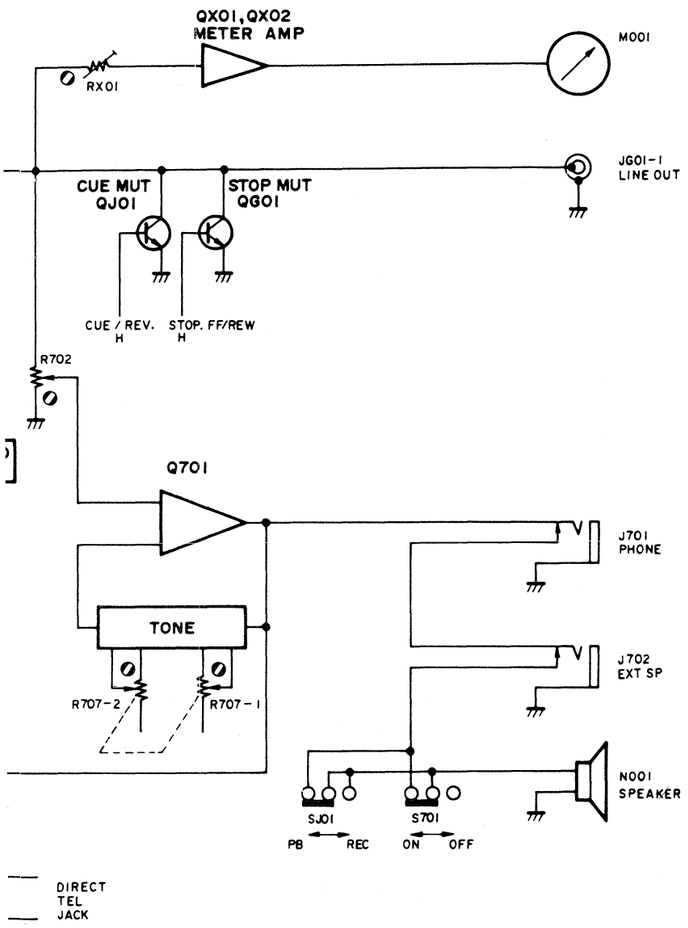
Level Diagram



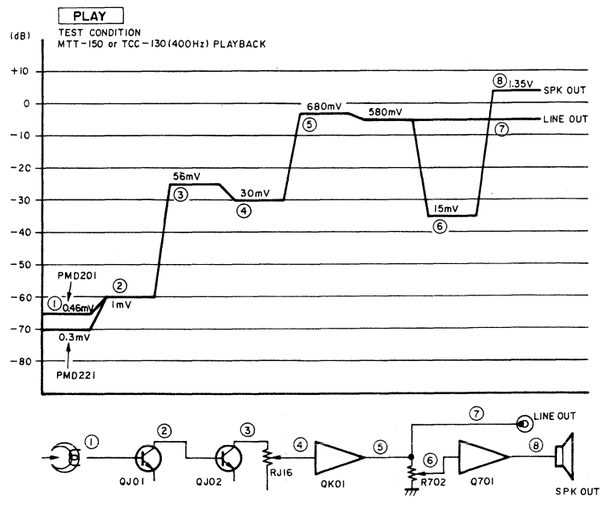


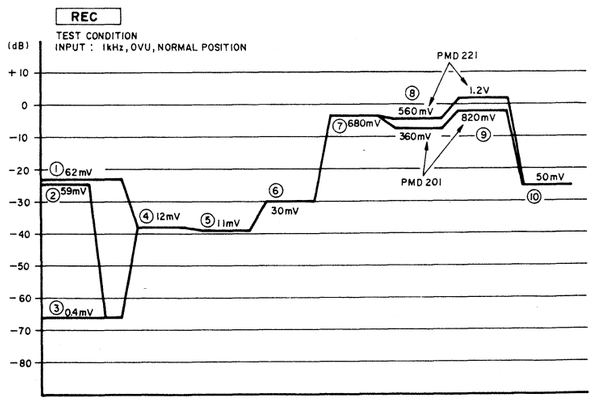


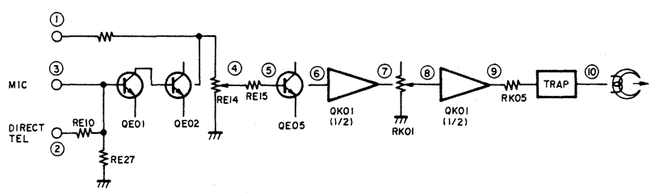




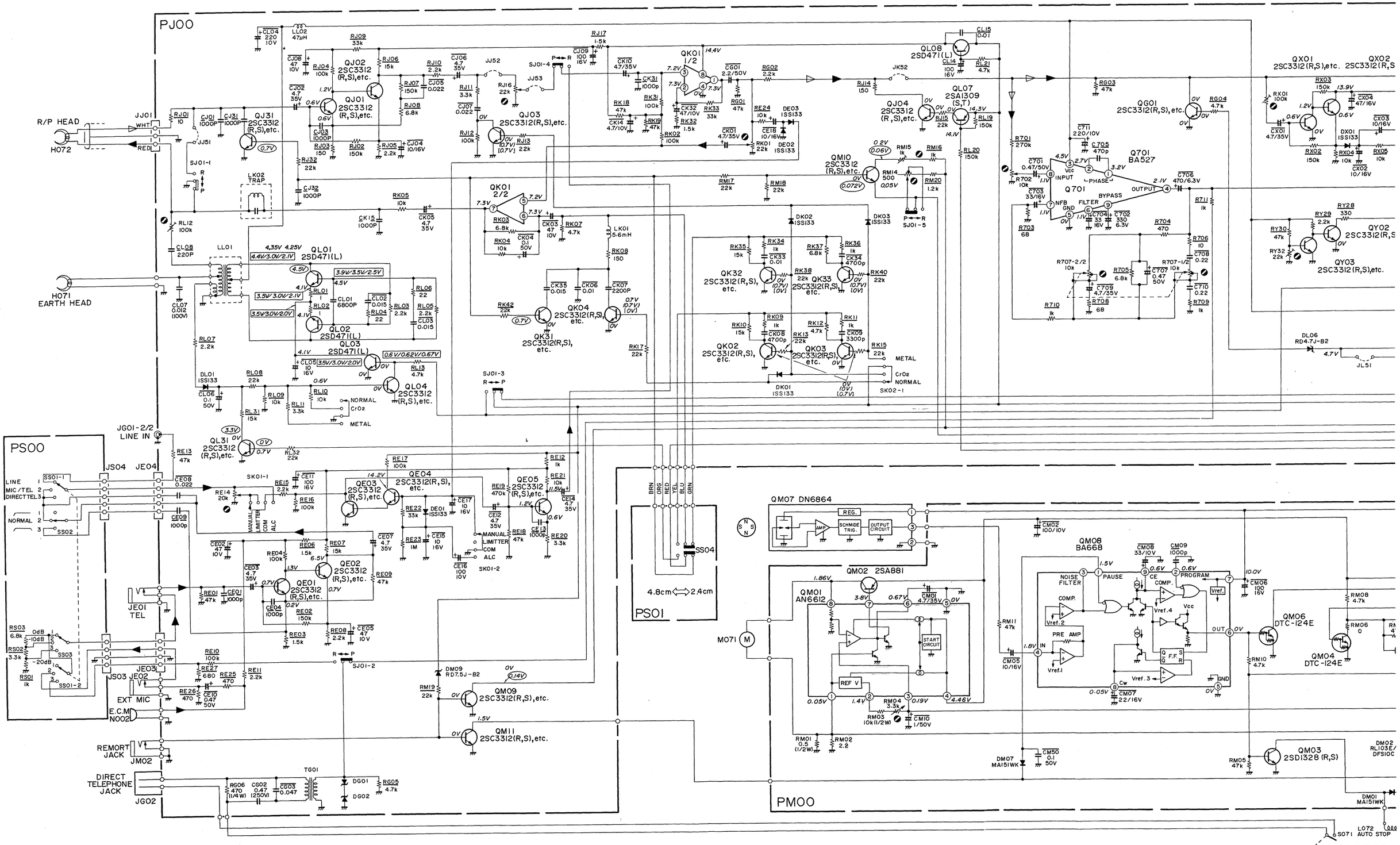
Level Diagram

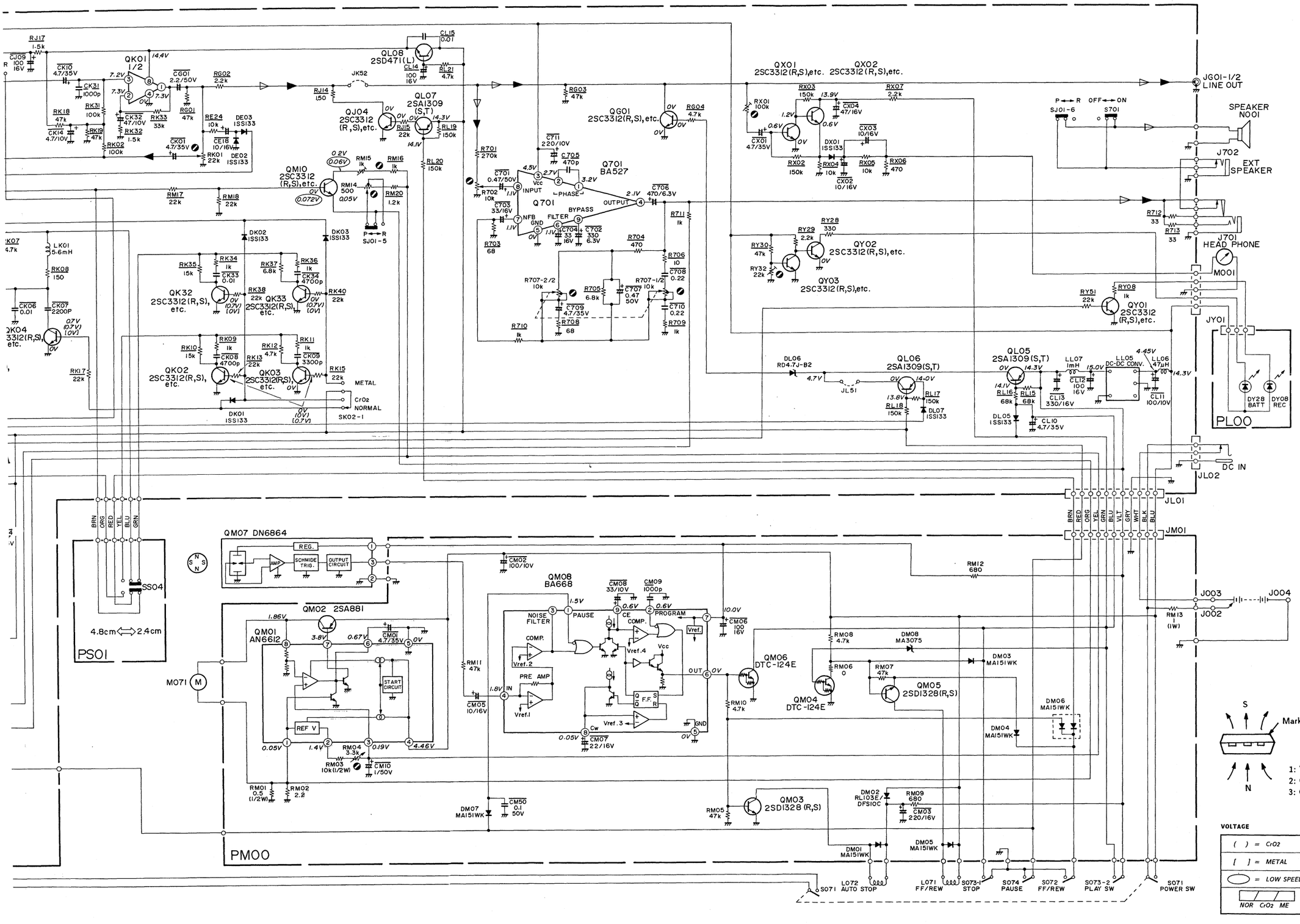






2. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side)





2SC Type
QY02,QY03

2SC2784(L)
QE01~QE05
QJ01,QJ02

2SC3312(R,S)
QG01,QJ03,QJ04
QK02~QK04
QK31~QK33
QL04,QL31
QM09,QM10
QX01,QX02,QY01

2SA1309
QL05~QL07

2SD471(L)
QL01~QL03

FRONT VIEW
2SA881(O)
QM02

2SD1328(R,S)
QM03,QM05
(CHIP PARTS)

DTC-124E
QM04,QM06
(CHIP PARTS)

TOP VIEW
NJM2043DD
QK01,QN01
AN6612
QM01

S
Mark Plate
N
1: Vcc
2: GND
3: Output

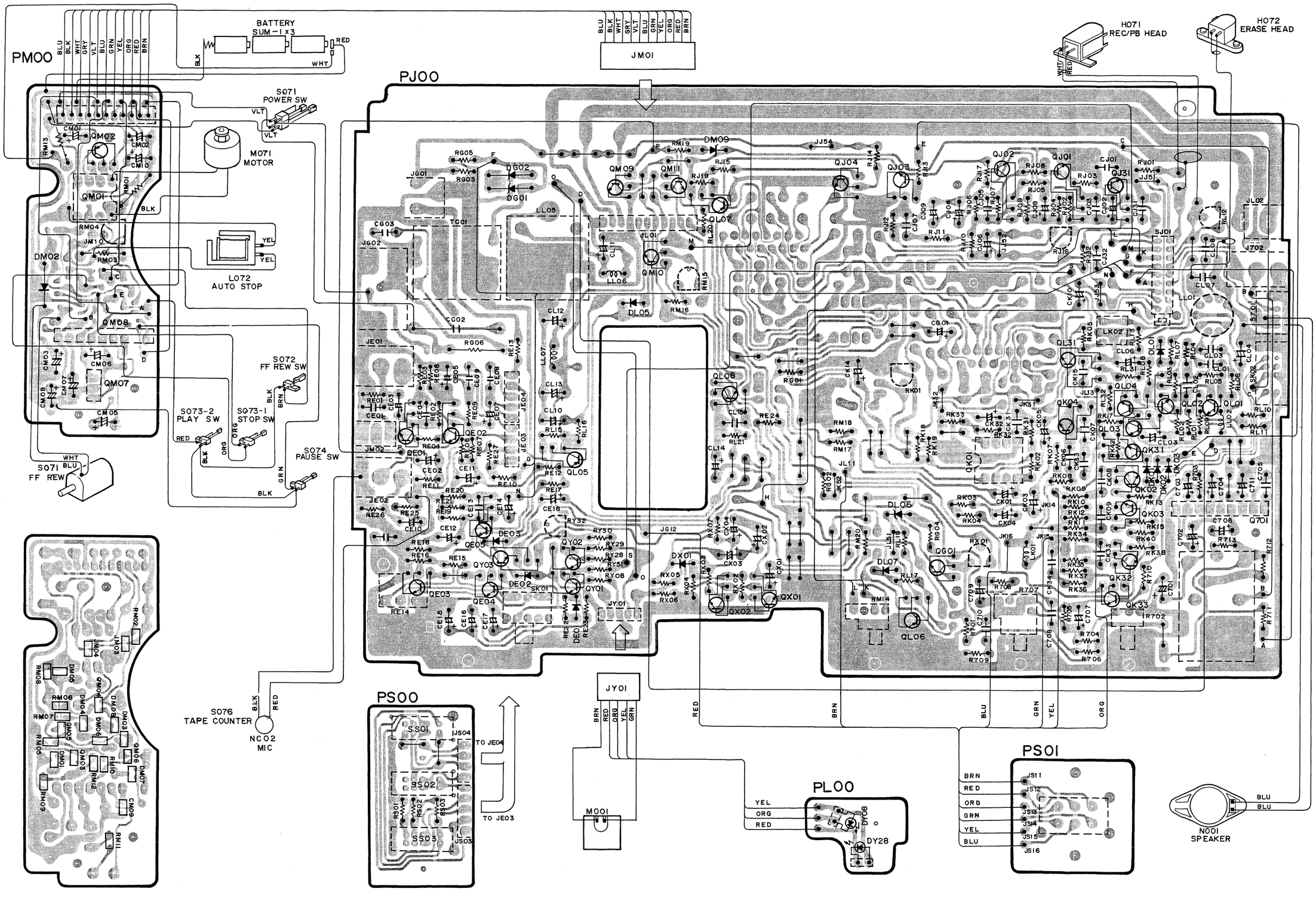
DN6838
QM07

1. VCC
2. GND
3. OUTPUT

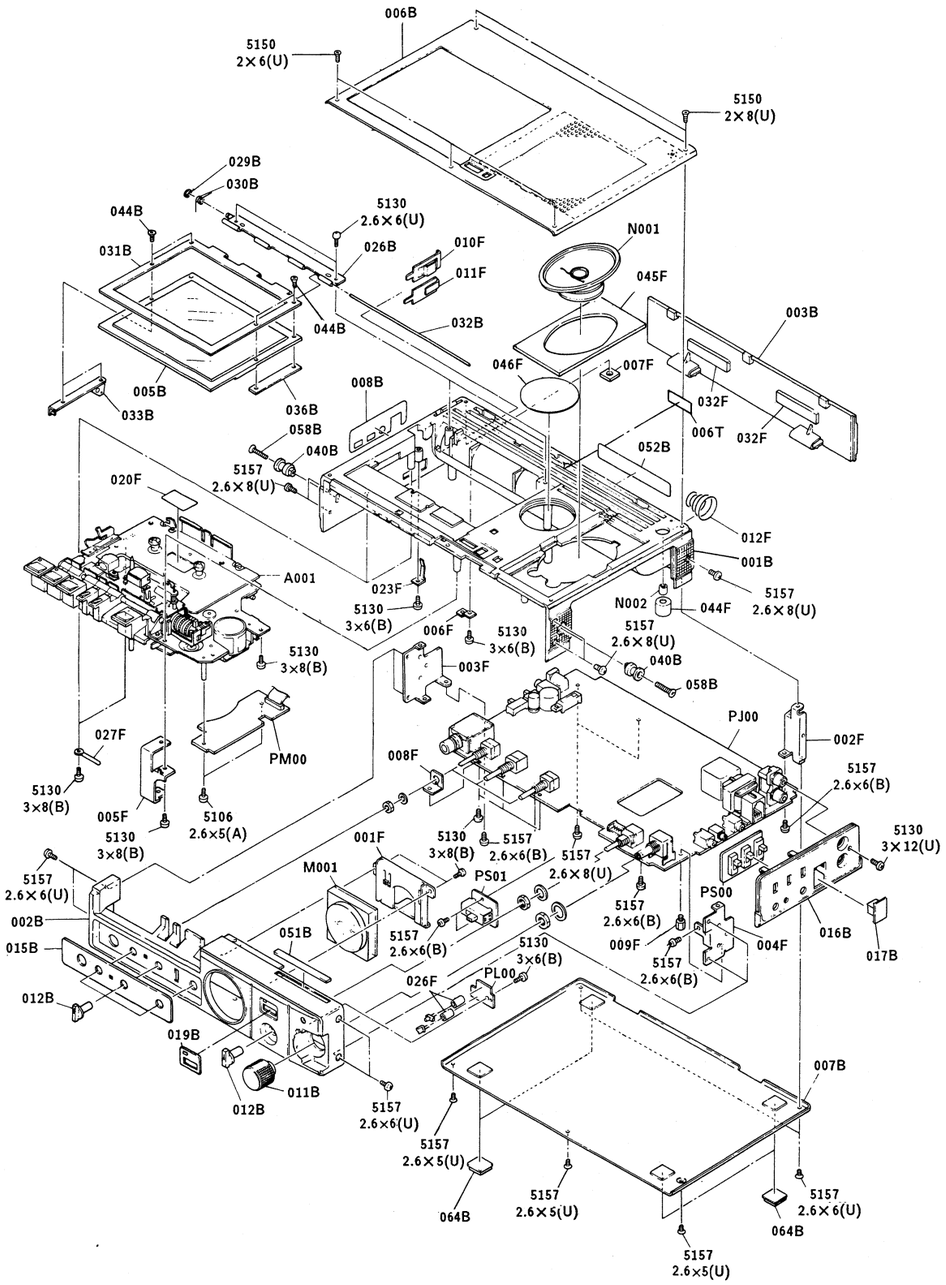
FRONT VIEW
BA337 QM08
BA527 Q701

VOLTAGE
( ) = CrO2
[ ] = METAL
= LOW SPEED
NOR CrO2 ME

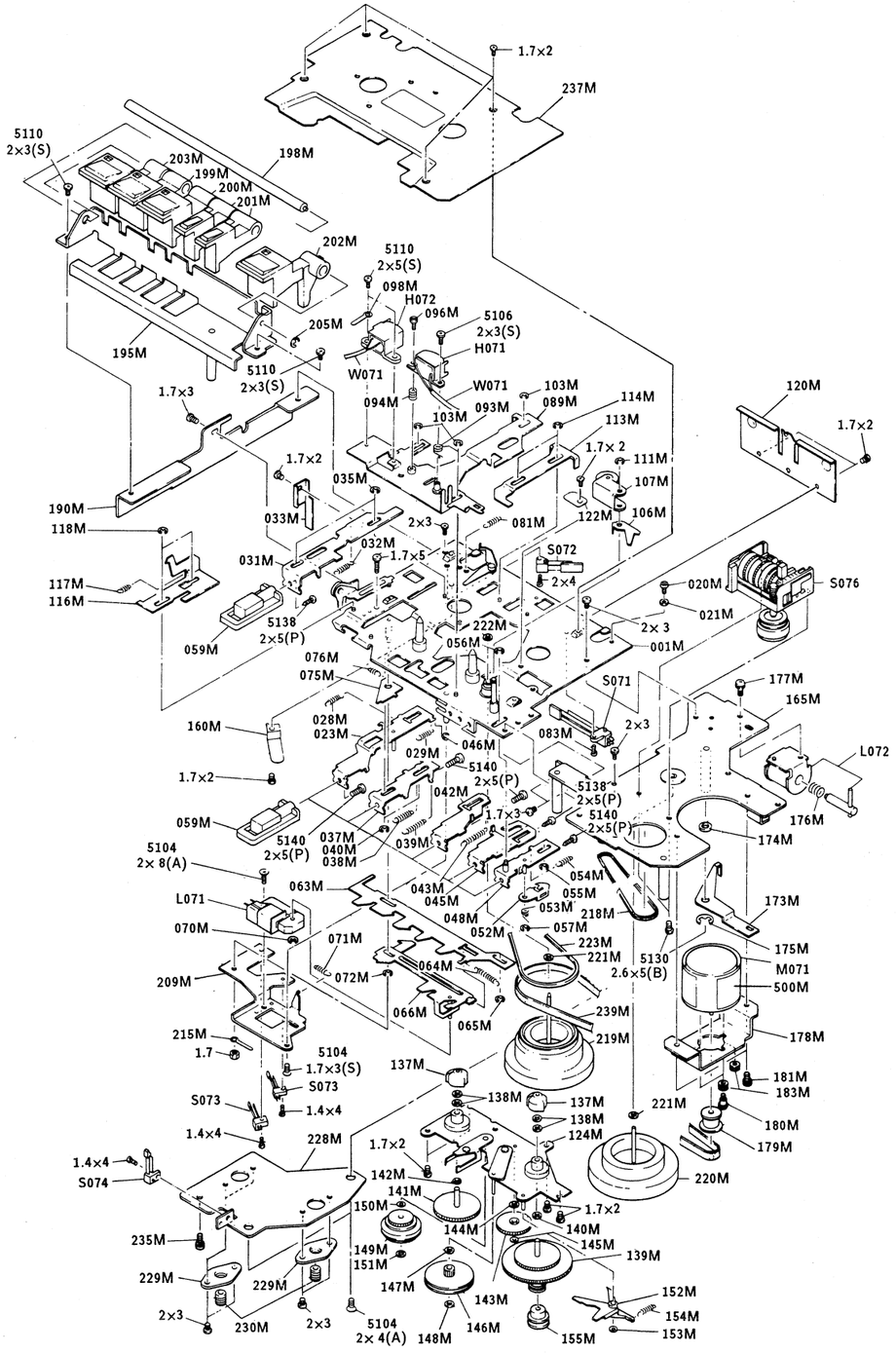
NOTE:
PLAY SIGNAL LINE
REC SIGNAL LINE


PM00
BLU
BLK
WHT
GRY
VLT
BLU
GRN
YEL
ORG
RED
BRN
BATTERY
SUM-1x3
RED
BLK
WHT
JM01
PJ00
H071
REC/PB HEAD
H072
ERASE HEAD
S071
POWER SW
VLT
M071
MOTOR
L072
AUTO STOP
YEL
S072
FF REW SW
S073-2
PLAY SW
S073-1
STOP SW
S074
PAUSE SW
S071
FF REW
S076
TAPE COUNTER
NC02
MIC
PS00
SS01
SS02
SS03
TO JE04
TO JE03
JY01
M001
PL00
DY06
DY28
PS01
NO01
SPEAKER

3. EXPLODED VIEW AND PARTS LIST



REF. DESIG.	PART NO.	DESCRIPTION
001B	4822 443 40888	Case (A), Top
002B	4822 443 40889	Front Panel
003B	4822 426 50757	Lid, Battery
005B	4822 426 50759	Lid, (C) Cassette
006B	4822 443 30774	Cover (A), Top
007B	4822 443 30775	Cover (B), Bottom
008B	4822 459 10952	Label, Case (A)
011B	4822 413 41567	Knob, REC Level
012B	4822 412 20075	Knob, LEVEL, TONE, PITCH, REC MODE
015B	4822 454 12552	Indicator, Front
016B	4822 454 12553	Indicator, Jack Board
017B	4822 462 71649	Cap, Indicator
019B	4822 459 40657	Mask, Indicator
026B	4822 417 10854	Hinge Ass'y (A)
029B	4822 532 11301	RG Ring, E
030B	4822 492 41426	Spring
031B	4822 417 10853	Hinge (B)
040B	4822 532 11254	Collar
044B	4822 502 12163	F.H.M. Screw F2×4
051B	4822 459 10691	Badge
058B		F.H.M. Screw F3×18
064B	4822 462 40869	Leg, Cover (B)
010F	4822 290 60593	Terminal (+)
011F	4822 290 60594	Terminal
012F	4822 290 40212	Terminal (-)
018F	4822 502 30401	P. Tapped Screw P2.6×4
020F	4822 380 20226	Reflector
023F	4822 492 41427	Spring
A001		Mechanism Assembly
M001	4822 347 10303	V.U. Meter
N001	4822 240 30543	Speaker 4Ω 0.5W
N002	4822 242 30206	Mic Unit, ECM
001T	4822 736 20575	User Manual
001V	4822 498 20097	Strap
ZA01	4822 263 50114	A.C. Adaptor



REF. DESIG.	PART NO.	DESCRIPTION
020M		Screw
021M	4822 532 11285	Washer
028M	4822 492 41462	Spring, S/F Select Cam
029M	4822 492 33146	Spring, Stop Lever
032M	4822 492 33149	Spring, REC Lever
035M	4822 532 52213	RG Ring, REC Lever
038M	4822 492 33152	Spring, Head Base
039M	4822 492 41463	Spring, FWD Lever
040M	4822 532 52213	RG Ring, FWD Lever
043M	4822 492 41465	Spring, REW Lever
046M	4822 492 41658	Spring, FF Lever
052M	4822 403 40299	Arm, Pause Lock Cam
053M	4822 492 41424	Spring, Pause Lock Cam
054M	4822 492 33147	Spring, Pause Lever
055M	4822 532 52213	RG Ring, Pause Lever
056M	4822 532 52212	RG Ring, Pause Lever
057M	4822 532 52213	RG Ring, Pause Cam
063M	4822 522 31987	Cam, Lock Plate
064M	4822 492 41429	Spring, Lock Plate
065M	4822 532 52213	RG Ring, Lock Plate
066M	4822 522 31988	Cam, QMS Lock Plate Ass'y
070M	4822 532 52213	RG Ring, E
071M	4822 492 41466	Spring, QMS Lock Plate
072M	4822 532 52212	RG Ring, Lock Plate
076M	4822 492 41467	Spring, REC Inter Lock
081M	4822 492 33151	Spring, REC Safety
083M		F.H.M. Screw F1.7×3
093M	4822 492 33148	Spring, Pinch Roller
094M	4822 492 41461	Spring, Azimuth
096M	4822 502 13595	Screw, Azimuth
103M	4822 532 52213	RG Ring, Head Base
107M	4822 403 53998	Arm Ass'y, Pinch Roller
111M	4822 532 52213	RG Ring, Pinch Arm
114M	4822 532 52213	RG Ring, Switch C/R Lever
117M	4822 492 41468	Spring, Hook Lever
118M	4822 532 52213	RG Ring, Hook Lever
120M	4822 492 41418	Spring, Cassette Back
137M	4822 528 10777	Hub, Take-Up & S Reel Cap
138M	4822 532 11286	Washer, Under Reel Cap
139M	4822 522 31989	Gear, Take-Up Reel Gear Ass'y
140M	4822 532 11285	Washer, Under Clutch
141M	4822 522 31991	Gear, Supply Reel Gear Ass'y
142M	4822 532 11285	Washer, Under Supply Reel Ass'y
143M	4822 522 31994	Gear, FF
144M	4822 532 11285	Washer, Under FF Gear
145M	4822 532 52209	Washer, FF Gear
146M	4822 528 50198	Pulley, FWD Idler
147M	4822 532 11291	Washer, Under FWD Idler
148M	4822 532 52208	Spacer, FWD Idler
149M	4822 528 50199	Center Pulley Ass'y
150M	4822 532 52207	Spacer, Under C Clutch
151M	4822 532 52208	Spacer, C Pulley Ass'y
152M	4822 403 40219	ARM, Shut OFF
153M	4822 532 52211	Washer, Shut OFF Arm
154M	4822 492 41422	Spring, Shut OFF Arm
155M	4822 528 50193	Pulley Counter
160M	4822 492 41419	Spring, Leaf
174M	4822 532 11396	Washer, Auto Stop Link
175M	4822 532 11296	RG Ring, Auto Stop Link
176M	4822 492 41421	Spring, Auto Stop Solenoid

REF. DESIG.	PART NO.	DESCRIPTION
177M	4822 502 12426	L. Washer Screw L2.6×4
180M		Screw, Motor
181M	4822 502 12426	L. Washer Screw L2.6×4
183M	4822 532 11956	Bushing, Motor
199M	4822 410 24504	Button, Stop
200M	4822 410 24505	Button, FWD
201M	4822 410 24506	Button, REW & FF
202M	4822 410 24507	Button, Pause
203M	4822 410 24508	Button, REC
205M	4822 532 52212	RG Ring, Button Shaft
218M	4822 358 30523	Belt, Counter
219M	4822 528 60319	Flywheel
220M	4822 528 60234	Flywheel Ass'y, Sub
221M	4822 532 11291	Washer, Under Flywheels
222M	4822 532 51805	Spacer, Oil Fence
223M	4822 358 30533	Belt, Drive
229M	4822 403 52968	Retainer
230M	4822 403 52724	Adjuster
235M	4822 502 12426	L. Washer Screw L2.6×4
239M	4822 358 30522	Belt, Main
H071	4822 249 10398	REC/Play Head
H072	4822 249 40194	Erase Head
L071	4822 281 30176	Solenoid Coil, QMS Auto REW
L072	4822 281 30179	Solenoid Coil, Auto Stop
M071	4822 361 60338	D.C. Motor
S071	4822 271 30701	Mini Switch, Motor
S072	4822 276 11618	Mini Switch, F/R
S073	4822 271 30699	Mini Switch, Play/Stop
S074	4822 271 30699	Mini Switch, Pause
S076	4822 349 50339	Counter

4. MECHANISM AND CIRCUIT DESCRIPTION

4.1 Muting System

The muting circuit is provided to reduce the pops noise when generates on the Line Out at power ON/OFF.

1) When power is turned on . . . . .

As the emitter voltage of QL05 is higher than the base voltage during the charge current flows to CL10 through RL15 & RL16, QL05 is ON and it sends the muting voltage.

CL10 has been charged up, both the base and the emitter voltages of QL05 are equal. QL05 is OFF and the muting is released.

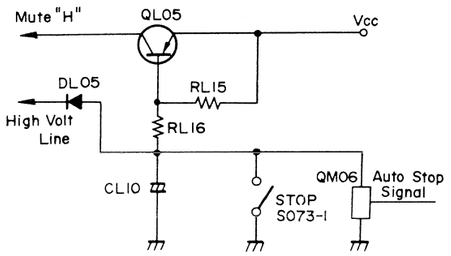
2) When the STOP button is depressed . . . . .

When the stop switch S073-1 is ON, the base current flows through. Also discharging CL10, QL05 is ON instantly, the muting system operates to reduce the pops noise at power ON/OFF.

QM06 provides to discharge CL10 on AUTO STOP.

As the muting time is in proportional to capacitance of CL10, it is preset by matching the threshold time of TAPE EQ Amp.

DL05 provides to discharge CL10 on FF and REW.

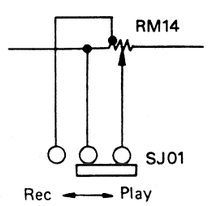


4.2 Auto Stop

The AUTO STOP function which detects the end of the tape is carried out by hole IC (QM07). The signal from QM07 is added to the pin④of QM08, while the auto stop duration is designated inside QM08. The time it takes for the auto stop function to activate after the tape stops, is determined in CM08. At this time TE is TE = 75 x CM08 (μF)mSec, while TW is TW = 30 x CM07 (μF)mSec as long as the auto stop function is operating. When it does not shut off the first time, TE--TW--TE--TW is repeated until it shuts off.

4.3 Pitch Control

The pitch control is used to vary the tape speed for playback operation. During recording, it is automatically set to the RM14 center position by SJ01.

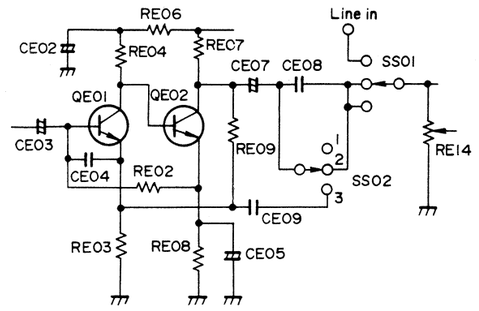


4.4 Ambient Noise Control (ANC)

ANC changes the bandwidth of the signals with the Mic Amp.

1. High pass
2. Normal
3. Band pass

CE08 and RE14 determine the Low Frequency cut. The NF volume of CE09 determines the High Frequency cut.

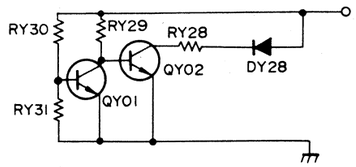


4.5 Low Battery Indicator

This circuit illuminates the LED when the supply voltage level is attenuated.

The dividing ratio for RY30 and RY31 determines the voltage at which the light is illuminated.

LED (DY28) is lit up when the base voltage of QY01 is less than about 0.6V.



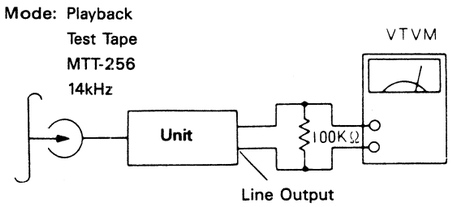
5. ELECTRICAL ADJUSTMENTS

Precautions for Adjustment and Measurement

1. Before playing back the test tape, thoroughly demagnetize the heads, capstan and similar metal parts using an erase, as the test tape-recorded tone is easily erased.
2. Do not place the test tape on any measuring instrument.
3. Do not put the test tape near a place where the eraser is used.
4. Method of Demagnetization: Turn the eraser power switch on at a position far away from the heads. Bring the eraser close to the heads, capstan and other parts to be demagnetized, and move it up and down four or five times to demagnetize. Slowly separate the eraser far away from the parts, and turn the power switch off.
5. Do not use any magnetized adjusting tool. If necessary, demagnetize with a bulk eraser from time to time in the course of each adjustment.
6. Do not turn semi-fixed resistor or coil more than needed.
7. Measure speed and wow and flutter in the normal operating state.
8. Do not apply locking bond excessively.

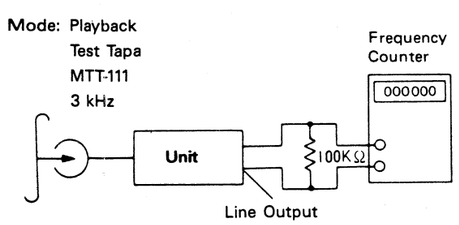
5.1 Head Azimuth Adjustment

1. Play the test tape MTT256 back. Adjust the head azimuth adjusting screw for maximum VTVM reading.
2. After adjustment, repeat the playback and stop settings several times to confirm no azimuth deviation.
3. After adjustment, lock the screws with bond.



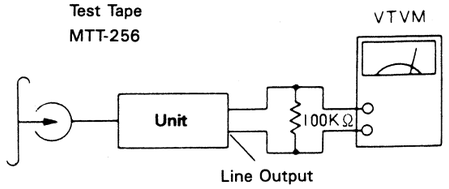
5.2 Tape Speed Adjustment

1. Play the 3kHz signal of the test tape MTT-111 back.
2. Adjust the adjusting resistor (RM04) on the PM00 P.W. Board so that counter readings are between 2990 — 3010Hz.
3. Then, adjust the Speed Selector Switch to LOW PLAY, and play MTT-111 back.
4. Adjust the adjusting resistor (RM15) on the PJ00 P.W. Board so that the counter readings are between 2900 — 3010 Hz.



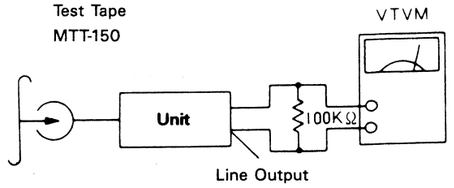
5.3 Playback Equalizer Measurement

1. Adjust the tape selector switch to NORMAL.
2. Play the 315Hz signal of the test tape MTT-256 back. The VTVM at OdB.
3. Play the 12.5kHz signal of the test tape back. Confirm a frequency response of 0 to 2dB in reference to the 315Hz signal level. Then, play the 12,5kHz signal back. Set the tape selector to CrO_2, Metal. Confirm the 12.5kHz signal readings at — 4.5dB, ± 1dB.



5.4 Playback Level Adjustment

1. Adjust the Tape Selector Switch to NORMAL and turn the NR switch OFF.
2. Play the test tape MTT-150 back. Adjust RJ16 so that the voltage of Line output is 580mV.



5.5 Level Meter Adjustment

1. Adjust the Tape Selector Switch to NORMAL.
2. Play the test tape MTT-150 back. Adjust RX01 at 0dB Level Meter reading.

5.6 Playback Noise Measurement

1. Set the selector switch to NORMAL.
2. Play back the blank tape and make sure that the noise volume is below 2mV when the REC LEVEL Knob is set to both maximum and minimum.

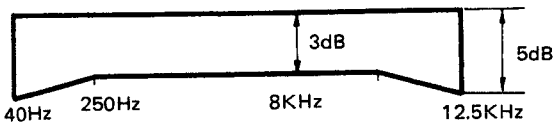
NOTES:

1. Perform measurements when the power hum is a at minimum.
2. Perform measurements under conditions where induction noise will not affect measurements.

5.7 Record/Playback Frequency Response and Recording Level Adjustment

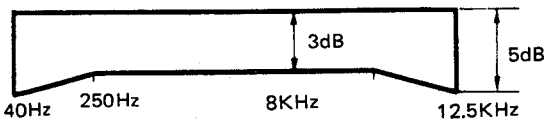
[NORMAL]

1. Set the tape selector switch to NORMAL.
2. Insert the AC-212 test tape in the cassette holder and set the recording conditions and attenuate from 1kHz, 580mV to — 25dB on Line Out.
3. Rewind and play the tape back, then set RL12 so that the level of 1kHz is brought within ±0.5dB.
4. When playing the tape back, set RK01 so that the level of 1kHz is the same as that on the Rec Monitor.
5. After making these adjustments, record and play back at 1kHz, 10kHz, 12.5kHz. Make sure results comply with the following diagram.



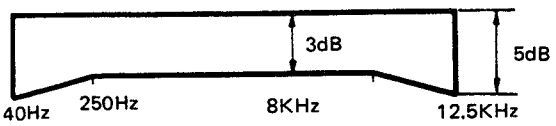
[CrO_2]

1. Set the tape selector switch to CrO_2.
2. Insert the AC-512 test tape in the cassette holder and set the recording conditions. Attenuate from 580mV to — 25dB on Line Out with the attenuator and record at 1kHz, 10kHz, and 12.5kHz on an unrecorded section of the tape.
3. Record and playback at 1kHz, 10kHz, and 12.5kHz. Make sure results comply with the following diagram.



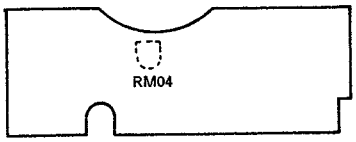
[METAL]

1. Adjust the Tape Selector Switch to METAL.
2. Load the test tape AC-712 into cassette holder. Perform measurements as with CrO_2, and make sure they conform with the Chart.

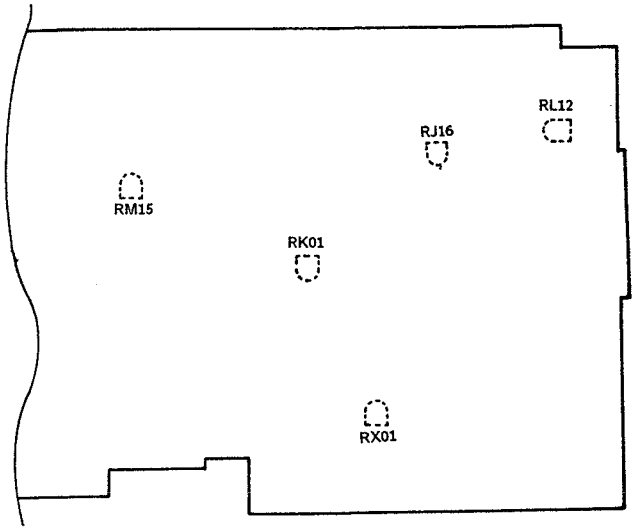


5.8 Alignment Points

PM00



PJ00



ASSIGNMENT OF COMMON PARTS CODES

RESISTOR

R***(1) GD05□□□140, Carbon film fixed resistor, ±5%,1/4W
R***(2) GD05□□□160, Carbon film fixed resistor, ±5%, 1/6W
① — Resistance value

Examples
① Resistance value

0.1Ω	001	100Ω	100	1kΩ	102	100kΩ	104
0.5Ω	005	18Ω	180	2.7kΩ	272	680kΩ	684
1Ω	010	100Ω	101	10kΩ	103	1MΩ	105
6.8Ω	068	390Ω	391	22kΩ	223	2.2MΩ	225

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C*** : CERAMIC CAP.
(1) DD1□□□□370, Ceramic condenser
① ② Disc type
Temp. coeff. P350 ~ N1000, 50V
② Capacity value
① Tolerance

Examples
① Tolerance (Capacity deviation)
±0.25pF ... 0
±0.5pF ... 1
±5% 5

* Tolerance of COMMON PARTS handled here are as follows:
0.5pF ~ 5pF ... ±0.25pF
6pF ~ 10pF ... ±0.5pF
12pF ~ 560pF ... ±5%

② Capacity value

0.5pF ... 005	3pF ... 030	100pF ... 101
1pF ... 010	10pF ... 100	220pF ... 221
1.5pF ... 015	47pF ... 470	560pF ... 561

C*** : CERAMIC CAP.
(1) DK16□□□300, High dielectric constant ceramic condenser
① Disc type
Temp. chara. 2B4, 50V
Capacity value

Examples
① Capacity value

100pF ... 101	1000pF ... 102	10000pF ... 103
470pF ... 471	2200pF ... 222	

C*** : ELECTROLY CAP. (⧺), FILM CAP. (⧻)
(1) EA□□□□□□10, Electrolytic condenser
① ② One-way lead type, Tolerance ±20%
② Dielectric strength
Capacity value

Examples
① Capacity value

0.1μF ... 104	4.7μF ... 475	100μF ... 107
0.33μF ... 334	10μF ... 106	330μF ... 337
1μF ... 105	22μF ... 226	1000μF ... 108
		2200μF ... 228

② Working voltage

6.3V ... 006	25V ... 025
10V ... 010	35V ... 035
16V ... 016	50V ... 050

(2) DF15□□□350, Plastic film condenser
① One-way type, Mylar ±5% 50V
Capacity value

Examples
① Capacity value

0.001μF (1000pF) ... 102	0.015μF ... 153
0.0018μF 182	0.1μF ... 104
0.01μF 103	0.56μF ... 564
	1μF ... 105

6. ELECTRICAL PARTS LIST

REF. DESIG.	PART NO.	DESCRIPTION
		PJ00-REC/PLAY AMP CIRCUIT BOARD
		PJ00-CAPACITORS
CL07	4822 121 42768	Film 0.012 μF ±5%
		PJ00-RESISTORS
R702	4822 100 30096	10kΩ (A) Variable
R707	4822 100 30099	10kΩ (W) Variable
RE14	4822 100 30097	20kΩ (B) Variable
RJ16	4822 100 10922	22kΩ (B) Trimming
RK01	4822 100 10922	22kΩ (B) Trimming
RL12	4822 100 20188	100kΩ (B) Trimming
RM14	4822 100 30098	500Ω (B) Variable
RM15	4822 100 20183	1kΩ (B) Trimming
RX01	4822 100 20188	100kΩ (B) Trimming
RY32	4822 100 10922	22kΩ (B) Trimming
		PJ00-SEMICONDUCTORS
DE01	4822 130 33305	Diode 1SS133
DE02	4822 130 33305	Diode 1SS133
DE03	4822 130 33305	Diode 1SS133
DK01	4822 130 33305	Diode 1SS133
DK02	4822 130 33305	Diode 1SS133
DK03	4822 130 33305	Diode 1SS133
DL01	4822 130 33305	Diode 1SS133
DL05	4822 130 33305	Diode 1SS133
DL06	4822 130 33758	Zener RD-4.7J-B2
DL07	4822 130 33305	Diode 1SS133
DM09	4822 130 82038	Zener RD-7.5J-B2
DX01	4822 130 33305	Diode 1SS133
Q701	4822 209 62229	IC BA527
QE01	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QE02	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QE03	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QE04	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QE05	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QG01	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QJ01	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QJ02	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QJ03	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QJ04	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QJ31	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QK01	4822 209 83631	IC 4558 DD
QK02	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QK03	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QK04	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QK31	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QK32	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QK33	4822 130 43313	Transistor 2SC3312 (R,S),etc.

REF. DESIG.	PART NO.	DESCRIPTION
QL01	4822 130 43347	Transistor 2SD471 L
QL02	4822 130 43347	Transistor 2SD471 L
QL03	4822 130 43347	Transistor 2SD471 L
QL04	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QL05	4822 130 60088	Transistor 2SA1309 (S,T)
QL06	4822 130 60088	Transistor 2SA1309 (S,T)
QL07	4822 130 60088	Transistor 2SA1309 (S,T)
QL08	4822 130 43347	Transistor 2SD471 L
QL31	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QM09	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QM10	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QM11	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QX01	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QX02	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QY01	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QY02	4822 130 43313	Transistor 2SC3312 (R,S),etc.
QY03	4822 130 43313	Transistor 2SC3312 (R,S),etc.
		PJ00-MISCELLANEOUS
J701	4822 267 31175	Jack Headphone
J702	4822 267 31172	Jack Ext SP
JE01	4822 267 31172	Jack Tel Pick up
JE02	4822 267 31172	Jack Mic
JE03	4822 323 10125	Jumper Lead
JE04	4822 323 10238	Jumper Lead
JG01	4822 267 30604	Terminal Pin Jack 2P
JL01	4822 265 10069	Jack Connector
JL02	4822 265 10085	Jack DC IN
JM02	4822 267 31174	Jack Remote
JY01	4822 265 10071	Jack Connector
LK01	4822 157 62213	Choke Coil 5.6mH
LK02	4822 156 10845	Choke Coil Bias Trap 85kHz
LL01	4822 157 62205	Osc Transf. Bias Osc Coil
LL02	4822 156 10676	Choke Coil 47μH
LL05	4822 146 10145	Osc Transf. DC-DC Converter
LL06	4822 156 10676	Choke Coil 47μH
LL07	4822 157 62204	Choke Coil 1mH
S701	4822 277 30749	Slide Switch, Speaker ON/OFF
SJ01	4822 277 21391	Slide Switch Rec/Play
SK01	4822 273 10207	Rotary Switch Rec Mode
SK02	4822 277 21388	Slide Switch Tape Select
		PL00-LED CIRCUIT BOARD
		PL00-MISCELLANEOUS
DY08	4822 130 33211	LED Rec Ind. LN228PR
DY28	4822 130 33173	LED Batt Ind.LN222RP
		PM00-MECHA CONTROL CIRCUIT BOARD
		PM00-RESISTORS
RM01	4822 115 90189	0.5Ω 1/2W
RM03	4822 115 90191	10kΩ 1/2W
RM04	4822 101 30706	3.3kΩ (B) Trimming
RM13	4822 116 60321	4.7Ω 1W

REF. DESIG.	PART NO.	DESCRIPTION
		PM00-SEMICONDUCTORS
DM01	4822 130 43408	Diode Chip MA151WK
DM02	4822 130 32508	Diode RL1031E/DSF10C
DM03	4822 130 43408	Diode Chip MA151WK
DM04	4822 130 43408	Diode Chip MA151WK
DM05	4822 130 43408	Diode Chip MA151WK
DM06	4822 130 43408	Diode Chip MA151WK
DM07	4822 130 43408	Diode Chip MA151WK
DM08	4822 130 32874	Zener MA3075
QM01	4822 209 83693	IC AN6612
QM02	5322 130 61158	Transistor 2SA881
QM03	4822 130 60749	Transistor 2SD1328 R.S Chip
QM04	4822 130 62236	Semicon. Comp DTC-124E K
QM05	4822 130 60749	Transistor 2SD1328 R.S Chip
QM06	4822 130 62236	Semicon. Comp DTC-124E K
QM07	4822 209 82278	IC DN6838
QM08	4822 209 83699	IC BA668
		PS00-INPUT SELECT CIRCUIT BOARD
		PS00-MISCELLANEOUS
SS01	4822 277 21389	Slide Switch Input Select
SS02	4822 277 21389	Slide Switch Anc Select
SS03	4822 277 21389	Slide Switch Mic Att.
		PS01-TAPE SPEED SELECT CIRCUIT BOARD
SS04	4822 277 30751	Slide Switch Tape Speed

marantz®

4822 725 50908